

**AMENDMENTS TO THE CLAIMS**

1. (Currently amended) A plasma source apparatus comprising:

a substrate having a first surface and an opposing surface;

a second surface, said second surface being spaced apart from said first surface by a predetermined gap, connected to a power supply as a cathode;

a third surface connected to the power supply as an anode;

a magnetic field source providing a magnetic field axial with said magnetic field source, said magnetic field passing into both said first and second surfaces and through said gap, said magnetic field having a portion passing through said substrate is at least two times stronger at said first surface than at said second surface, said magnetic field portion having a strength strong enough to magnetize electrons; and

an electric field extending to said second surface and said electric field penetrating into an electron confining region of said magnetic field.

2. (Previously presented) A plasma source apparatus in accordance with claim 1, wherein:

said electric field extends to said substrate.

3. (Previously presented) A plasma source apparatus in accordance with claim 1, comprising:

a chamber, said chamber containing said first and second surfaces; and

said electric field extends from said chamber to said substrate.

4. (Currently amended) A plasma source apparatus in accordance with claim 1, comprising:

~~relative movement between~~ said substrate moving continuously relative to ~~and~~ said magnetic field.

5. (Currently amended) A plasma source apparatus in accordance with claim 1, wherein:

said substrate ~~comprises said second~~ has said surface parallel to said opposing surface.

6. (Withdrawn) A plasma source apparatus in accordance with claim 1, wherein:  
said substrate is biased positively.

7. (Withdrawn) A plasma source apparatus in accordance with claim 1, wherein:  
said substrate is tied to ground.

8. (Withdrawn) A plasma source apparatus in accordance with claim 1, wherein:  
said substrate is left floating.

9. (Previously presented) A plasma source apparatus in accordance with claim 1, wherein:  
said substrate is biased negatively.

10. (Previously presented) A plasma source apparatus in accordance with claim 1, wherein:

said substrate is biased with an AC voltage.

11. (Previously presented) A plasma source apparatus in accordance with claim 1, wherein:

said first and second surfaces are parallel.

12. (Withdrawn) A plasma source apparatus in accordance with claim 1, wherein:

said first and second surfaces are non-parallel.

13. (Previously presented) A plasma source apparatus in accordance with claim 1, wherein:

said substrate comprises a flexible web supported by a conveyor roll.

14. (Previously presented) A plasma source apparatus in accordance with claim 1, comprising:

a mirror field shaped into a racetrack and having a return field passing through the center of the racetrack.

15-20 (Canceled)

21. (New) A plasma source apparatus comprising:

- a substrate having a first surface and an opposing surface;
- a second surface, said second surface being spaced apart from said first surface by a predetermined gap, connected to a power supply as a cathode;
- a third surface connected to the power supply as an anode;
- a permanent magnet under said substrate providing a magnetic field axial with said permanent magnet under said substrate, said magnetic field passing into both said first and second surfaces and through said gap, said magnetic field having a portion passing through said substrate is at least two times stronger at said first surface than at said second surface, said magnetic field portion having a strength strong enough to magnetize electrons; and
- an electric field extending to said second surface and said electric field penetrating into an electron confining region of said magnetic field.

22. (New) A plasma source apparatus in accordance with claim 21, wherein:

- said electric field extends to said substrate.

23. (New) A plasma source apparatus in accordance with claim 21, comprising:

- a chamber, said chamber containing said first and second surfaces; and
- said electric field extends from said chamber to said substrate.

24. (New) A plasma source apparatus in accordance with claim 21, comprising:

- relative movement between said substrate moving continuously relative to said magnetic field.

25. (New) A plasma source apparatus in accordance with claim 21, wherein:  
said substrate is biased negatively.

26. (New) A plasma source apparatus in accordance with claim 21, wherein:  
said substrate is biased with an AC voltage.

27. (New) A plasma source apparatus in accordance with claim 21, wherein:  
said first and second surfaces are parallel.

28. (New) A plasma source apparatus in accordance with claim 21, wherein:  
said substrate comprises a flexible web supported by a conveyor roll.

29. (New) A plasma source apparatus in accordance with claim 21, comprising:  
a mirror field shaped into a racetrack and having a return field passing through the center  
of the racetrack.